

Patent Claims

- 94
1. A method for improving thermal process steps in the patterning of semiconductor wafers,
5 in which the wafer, in a process chamber, is heated to the process temperature at a predetermined heating rate and, after the envisaged process time has elapsed, is cooled again at a predetermined cooling rate, characterized in that the wafer is
10 heated at a heating rate of approximately 12°C/sec up to a brief stabilization step, with regard to the process duration, at constant temperature and then up to the envisaged process temperature at a heating rate of 10°C/sec and, after the process
15 time has elapsed, is cooled down to room temperature again at a predetermined cooling rate; and in that the stabilization step is raised to a temperature of 120°C below the process temperature.
 - 20 2. The method as claimed in claim 1, characterized in that the thermal process step is a rapid thermal processing (RTP) process during an oxidation.
 - 25 3. The method as claimed in claim 1 or 2, characterized in that the temperature of the stabilization step is 1000°C.
 4. The method as claimed in one of claims 1 to 3,
30 characterized in that the wafer is cooled at a cooling rate of approximately 20°C/sec.
 5. The method as claimed in claim 4, characterized in
35 that the wafer, at least in the temperature range in which wafer distortions can occur, is cooled at the cooling rate of approximately 20°C/sec from the process temperature to 120° below the process

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temperature and is then cooled at a lower cooling rate.
